Academic Programmes in Universities in East Africa:

A Catalyst to Development

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Abstract

The types of academic programmes offered by universities, both public and private, are considered to be critical to the realization of development agendas. This study was descriptive in nature and sought to establish whether universities in the East African region were offering academic programmes that were relevant to the realization of the global development agendas. The study further sought to establish whether there was any significant association between the academic programmes offered by public and private universities in the region. The sample was drawn from the websites of the national quality assurance agencies in the region and consisted of one hundred and thirty universities whose academic programmes had been accredited by the agencies. The study revealed that the Humanities and Commerce categories of academic programmes were over represented in the market in relation to the global development demands, and thus, their further development in universities needed to be restricted. On the other hand, the categories of Political and Legal related studies, Sociology, Psychology and Development related studies, Architecture and Engineering and Natural and Life Sciences, which were critical to the realization of the global development agendas, were not adequately being offered by the universities. In addition, significantly more public universities were found to be offering the Architecture and Engineering and Natural and Life Sciences categories of academic programmes. This was attributed to the greater government financial support given to public rather than private universities in the region. The support further translates to greater potential within the public universities to provide the necessary academic resources for the backing of the latter categories of academic programmes. In conclusion, the prioritization of the development and implementation of academic programmes that are relevant is a sure way of accelerating the realization of the development agendas in the region.

Keywords: Universities, Academic programmes, Development agendas

1. Introduction

For more than a decade, the United Nations, through its members, has facilitated the formulation and implementation of global development goals. Since 2000, great focus has been given to the achievement of Millennium Development Goals (MDGs) (United Nations, 2000). The MDGs, whose lifespan is scheduled to end on 31st December 2015, is expected to be succeeded by the Post-2015 Sustainability Development Goals (SDGs).

The five East African countries, namely, Burundi, Kenya, Rwanda, Tanzania and Uganda, are all member states of the United Nations. These countries' national development goals, which have been concretized into National Visions, have been pegged on the global development goals (United Republic of Tanzania, 1999; Republic of Rwanda, 2000; Republic of Kenya, 2007; Burundi, 2011; Republic of Uganda, 2013).

Education is considered to be a catalyst for development (Bashir, Herath & Gebremedhin, 2012; UNESCO, 2014). Its role in the global development agenda has been captured by the second goal of the MDGs, that is, *achievement of universal primary education*. Although positive steps have been taken towards meeting this second goal, Beall (2015) argued that these steps do not sufficiently result in effective education, poverty reduction, development of knowledge-based economies and enhancement of sustainable development. The latter results would better have been achieved if higher education was considered in the development agendas (Robert & Ajai-Ajagbe, 2013; Beall, 2015; Sabri, 2015).

There is need, therefore, for greater responsiveness of higher education, and in particular, university education, to the

needs of the society and the economy (Pillay, 2011; Association of Public and Land-grant Universities, Knowledge Center on Higher Education for African Development, 2014). According to Kiani (2011), *"…there is a high correlation between the Higher Education programmes and development of an economy because there is no comprehensive program of development that can take place without human resources, and there is no human resources without education and well-studied plans that really train them and prepare them according to the needs of society (pp. 31)"*. Recognition of university education as a critical driver to economic development demands for the curriculum of academic programmes, and didactic methods therein utilized, to emphasize more on the needs of the society (Kiani, 2011; Montanini, 2013). In view of the latter, it is critical that universities review their academic programmes in order to ensure that they contribute to global, regional and national development. This has potential to minimize the mismatch experienced between academia and market needs thus resulting in greater graduate-employment equilibrium.

In Africa, it has been observed that there is a clear distinction between the kind of academic programmes offered by public higher education institutions and those offered by private higher education institutions (Woldegiorgis & Doevenspeck, 2013). Public institutions are observed to focus more on science, technological, research and development-related programmes while private institutions are observed to focus more on humanities and social sciences. While this observation is general to the continent of Africa, which is diverse in nature with respect to university education, it would be of essence to establish if similar results would be obtained, specifically, in the East Africa region.

This study therefore sought to answer the following two research questions:

   a)   What is the distribution of academic programmes offered in universities in East Africa in relation to the focus of the global development agenda?

   b)   Is there any significant association between the type of academic programmes offered by public and private universities in East Africa?

2. Literature review on university education and development goals

a) *Focus of global development goals*

The MDGs have been the focus of the global development agenda for the past fifteen years. This agenda aimed at addressing the world's most pressing economic, social, cultural and humanitarian challenges (Simmonds, 2014) with a view of making   significant progress towards improving people's livelihood by the end of 2015 (Yiu & Saner, 2014). These challenges included poverty, education, gender, health, environmental stability and globalization (Robert & Ajai-Ajagbe, 2013).

The MDGs, which were eight in number, were considered to be interrelated (Sen & Mukherjee, 2014) and ambiguous in terms of their definition and targets (Langford, Sumner & Alicia, 2013), thus causing a challenge in their monitoring and evaluation. Langford, Sumner & Alicia (2013), nonetheless, observed that the MDGs had global great impact in terms of their adoption, adaption and allocation of resources. They, however, observed weakness in the acceleration of their realization globally.

As the term of the MDGs comes to an end, the future global development agenda, dubbed Post-2015 SDGs, has been formulated. The Post-2015 SDGs, which consists of seventeen development goals, takes cognizance of the weaknesses and gaps of the MDGs and the current global development trends. The main focus of the Post-2015 SDGs is on poverty eradication, social development, water sanitation, energy, green growth and environmental sustainability, inclusive economic development, governance and peace and security (Beisheim, 2012; Yiu & Saner, 2014).

b) *Role of universities in the development agendas*

The MDGs have been observed to have promoted increased health and well-being in many countries, although at a slow pace (Fehling, Nelson & Venkatapuram, 2013). The slow pace of realization of the global development agenda has partly been attributed to failure to mainstream higher education into the development agenda. In the recent past, there have been deliberate debates on the contribution of higher education to development.

It is now apparent that higher education institutions, and more specifically universities, play a critical role in the provision of sustainable, appropriately trained and skilled human resource (Woldegiorgis & Doevenspeck, 2013; Association of Public and Land-grant Universities, Knowledge Center on Higher Education for African Development, 2014). In addition, universities provide knowledge bases and innovations for the realization of global and national development (Robert & Ajai-Ajagbe, 2013; Bloom et al, 2014). Furthermore, universities contribute to dissemination

and use of knowledge; maintenance of knowledge; provision of solutions to specific societal problems; promotion of technological catch-up; and maximization of economic outputs, all of which have potential to contribute to development agendas (Kiani, 2011; Montanini, 2013; Association of Public and Land-grant Universities, Knowledge Center on Higher Education for African Development, 2014; Asiyai, 2015). They are major drivers of economic competitiveness in an increasingly knowledge-driven global economy; technologically advanced societies; and healthy and improved quality life (Pillay, 2011; Bloom el. al., 2014). They are also central to addressing social, cultural, economic, political and environmental challenges (Schlottmann, 2010; Kiani, 2011; Pillay, 2011; Bashir, Herath & Gebremedhin, 2012; Botman, 2013; Montanini, 2013; Fadeeva, Galkute, Mader & Scott, 2014; Leung and Waters; 2015; Beall, 2015; Sabri, 2015).

Universities contribute to societies through their teaching, innovation, research, knowledge development, community service, inter-generational storage and transmission of knowledge roles (Universities Australia, 2012; Robert & Ajai-Ajagbe, 2013; Woldegiorgis & Doevenspeck, 2013; Association of Public and Land-grant Universities, Knowledge Center on Higher Education for African Development, 2014; Asiyai, 2015). As teaching institutions, universities have the potential to produce the human resource that is required for achieving the global development agendas, through channelling out appropriate and quality graduates to meet the labour market needs. These graduates include engineers, health specialists, leaders, policy makers, physicians, agriculturalists, technologists and scientists (Kiani, 2011; Robert & Ajai-Ajagbe, 2013). On the other hand, as research institutions, universities have the potential to generate the knowledge required to address issues raised in the global development agendas, including sustainability of developments, food insecurity, disease, climate and environmental changes and poverty (Robert & Ajai-Ajagbe, 2013). Therefore, universities, being centres of intellectual production, need to play a more active role in their contribution towards realization of the global development agendas (Montanini, 2013; Sabri, 2015).

c) *Academic disciplines in universities and the development agendas*

Universities need to adapt to the changing demands of the markets through, among other aspects, developing curricula for academic programmes that include the knowledge and skills required for the current economic, political, social and environmental context (Pillay, 2011). In particular, it is necessary that universities offer academic programmes in relevant academic disciplines. These programmes should be shaped by, among other factors, the needs of the society and relevance to the development agendas (Sabri, 2015). This calls for universities, being autonomous in nature, to exercise their academic freedom in determining what type of academic programmes should be taught; how they should be taught, who should teach them and who is admissible to study in the academic programmes, while pursuing quality education (Hogan, 2013; Usman, 2014).

Numerous and interdisciplinary academic programmes are offered by the various universities in East Africa. This is in line with current global trends in higher education, by which several academic disciplines are merged to create new knowledge (Vermeulen, Bootsa & Tijm, 2014).

The global development agenda greatly focuses on science, technology, engineering, financial literacy, mathematics and entrepreneurship (Montanini, 2013; Mujtaba & Reiss, 2015). Consequently, it is crucial that universities, through provision of related academic programmes channel out products that are able to meet the global developmental needs. Several authors including, United Nations Development Program (UNDP) (2010); International Federation for Home Economics (2011), Sen & Mukherjee (2014) and Simmonds (2014), have related various MDGs to academic disciplines as illustrated on Table 1.

Table 1. MDGs and related academic disciplines

MDGs	Related Academic Disciplines
MDG1: Eradicate extreme poverty and hunger	Cultural Studies; Economics; Natural sciences; Health Studies; Education; Social Sciences; Infrastructural studies; Technology Studies; Agriculture; Food science
MDG2: Achieve universal primary education	Education, Cultural Studies
MDG3: Promote gender equality and empower women	Education; Cultural Studies; Religion; Law; Economics; Social Sciences; Political Studies; Governance
MDG4: Reduce child mortality	Health Studies; Natural Sciences; Education; Food Sciences
MDG5: Improve maternal health	Health Studies; Education; Technology Studies; Social Sciences; Cultural Studies; Political Studies; Governance
MDG6: Combat HIV/AIDS, malaria and other diseases	Health Studies; Social Sciences; Education; Natural Sciences; Environmental Studies
MDG7: Ensure environmental sustainability	Environmental Studies; Economics; Social Sciences; Education; Natural Sciences; Technology Studies; Governance
MDG8: Develop a global partnership for development	Finance; Business Studies; Economics; Communication Studies; Infrastructural Studies; Technology Studies; Political Studies; Intercultural Studies; Governance Studies

The WSIS Forum (2015) in Geneva, which included international participants from UNESCO, UNCTAD, UNDP, UNDESA, FAO, WHO, UPU, UNEP, International Trade Centre; ILO and WMO, linked various action lines to the Post-2015 SDGs. The latter action lines formed the basis for determining the academic disciplines that relate to the Post-2015 SDGs as illustrated on Table 2.

Table 2. Post-2015 SDGs and related academic disciplines

Post-2015 SDGs	Related Academic Disciplines
SDG1: End poverty in all its forms everywhere	Social Sciences; Political Science; Education; Business studies; Cultural Studies; Technology Studies; Agriculture; Information, Communication and Technology (ICT); Health Studies; Governance
SDG2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Business Studies; Economics; Health Studies; Agriculture; Education; Technology Studies
SDG3: Ensure healthy lives and promote well-being for all at all ages	ICT; Education; Health Studies
SDG4: Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	Education; Economics; Cultural Studies; Social Sciences
SDG5: Achieve gender equality and empower all women and girls	ICT; Education; Economics; Social Sciences; Political Sciences; Governance
SDG6: Ensure availability and sustainable management of water and sanitation for all	Natural Sciences; Political Sciences; Governance; Cultural Studies; Education; ICT; Health Studies; Engineering; Environmental Studies
SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all	Natural Sciences; Political Sciences; Cultural Studies; Technology Studies; Engineering; Environmental Studies
SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Business; Economics; Political Science; Governance Studies; Education; Transportation studies; Environmental Studies; Health and Sanitation Studies; Agriculture

SDG9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Technology Studies including Engineering; Education
SDG10: Reduce inequality within and among countries	ICT; Economics; Political Sciences; Public Administration; Education; Business
SDG11: Make cities and human settlements inclusive, safe, resilient and sustainable	Cultural Studies; Community related studies; ICT; Public Administration; Social Sciences; Governance; Political Sciences
SDG12: Ensure sustainable consumption and production patterns	Policy Development; Political Sciences; Economics; Business; Health; Education; ICT; Environmental Studies; Transportation
SDG13: Take urgent action to combat climate change and its impacts	Political Sciences; ICT; Natural Sciences
SDG14: Conserve and sustainably use of oceans, seas and marine resources for sustainable development	Natural Sciences; Technology Studies; Engineering; Economics
SDG15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Natural Sciences; Political Sciences; Economics
SDG16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Social Sciences; Political Sciences; Public Administration; Governance; Law; Public Policy; Communication; Media Studies
SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development	Business; Economics; Intercultural Studies; Project Management; Law; Tourism Studies; Cultural Studies

Financial returns are of essence to the development of academic programmes by universities (Robert and Ajai-Ajagbe, 2013; Montanini, 2013; Association of Public and Land-grant Universities, Knowledge Center on Higher Education for African Development, 2014). They are vital for the provision of academic resources including infrastructural, physical facilities, technology and staff for the support of academic programmes of universities (Montanini, 2013; Association of Public and Land-grant Universities, Knowledge Center on Higher Education for African Development, 2014).

In conclusion, realization of development agendas is enhanced by human capital; research and knowledge bases; and innovations, all of which are products of relevant academic programmes in the universities. It is, therefore, of essence that universities provide quality education for purposes of influencing the realization of the development agenda. More specifically, the categories of academic programmes that have greatest bearing on the realization of the development agendas need to be prioritized in terms of their development and implementation by the universities. Thus, the academic programmes offered by universities need to match the expectations of the goals of the development agendas. The percentage of universities offering academic programmes that have greatest bearing on the development agenda need to be directly proportional to the percentage of goals of the development agendas that greatly depend of each category of academic programme for their realization. This philosophy has the potential of having universities channel appropriate graduates, research results, knowledge and innovations to the society, thus resulting in a rapid realization of the global development agenda.

3. Methodology

The study was descriptive in nature and aimed at establishing the distribution of academic programmes in universities in East Africa in relation to the expectations of the MDGs and Post-2015 SDGs, which are the pillars of global, regional and national development agendas. The study also aimed at establishing whether there was a relationship between the type of academic programmes offered in public universities and those offered in private universities in East Africa.

The East African Region has five (5) member states, notably, Kenya, Tanzania, Uganda, Rwanda and Burundi, each of which has a national quality assurance agency overseeing university education, including accreditation. The national quality assurance agencies are notably, Commission for University Education (Kenya), Tanzania Commission for Universities (Tanzania), National Council for Higher Education (Uganda), National Commission for Higher Education (Burundi) and Higher Education Council (Rwanda).

The sample, which was purposively drawn, was selected based on the availability of the universities' academic programmes on the websites of the national quality assurance agencies. The latter was an indication that the curricular and academic resources for the support of the academic programmes had been evaluated and had been found to have met the minimum requirements for consideration, in relation to quality and relevance.

National quality assurance agencies of three countries', namely Kenya, Uganda and Tanzania, provided information on accredited university programmes on their websites and thus were considered in the study. The sample consisted of all universities in the three East African countries whose accredited academic programmes were provided on the national quality assurance agencies' websites. A total of 130 out of 158 (82%) of accredited universities in East Africa were considered in the study. Forty seven out of fifty two (90%) were public universities while eighty three out of one hundred and six (78%) were private universities.

Secondary data on the type of academic programmes accredited from each university was collected. For purposes of the study, the academic programmes were grouped into ten categories, each having closely related academic disciplines, as provided on Table 3.

Table 3. Categorization of academic programmes offered in the universities

Category of Academic programmes	Academic Programmes
a) Humanities	Applied Arts; Classics; Design; Fine Arts; History; Languages; Literature; Museum Studies; Performing Arts; Philosophy; Religion and Theology; Visual Arts and related programmes
b) Education	Curriculum Studies; Educational Administration; Educational Psychology; History/Philosophy/Sociology of Education; Pedagogy and related programmes
c) Commerce related studies	Accounting; Business; Commerce; Economics; Finance; Management and related programmes
d) Political and Legal related studies	International Studies; Law; Peace and Conflict Studies; Nationalism Studies; Political Studies; Public Administration; and related programmes
e) Sociology, Psychology and Development related studies	Anthropology; Development Studies; Psychology; Social Policy; Social Work; Sociology; and related programmes
f) Other Social Science	Archaeology; Communication and Media Studies; Cultural Studies; Geography; Hospitality; Library and Information Science; Sports Science; Tourism and related programmes
g) Medical and Health Science	Anaesthesia; Anatomy; Biomedical Science; Dentistry; Dermatology; Medicine/Surgery; Natural/Alternative Medicine; Nursing; Obstetrics/Gynaecology; Optometry/Ophthalmology; Paediatrics; Pathology; Podiatry; Psychiatry; Radiography; Pharmacy/Pharmacology; Speech/Rehabilitation/Physiotherapy; and Other Medical and Health Studies
h) Architecture and Engineering	Architecture; Engineering; and related programmes
i) Natural and Life Sciences	Agriculture/ Forestry Botany; Aquaculture/Marine Science; Biology/Biochemistry/Microbiology; Chemistry; Energy/Environmental Studies; Food Science; Geology; Neuroscience; Physics; Zoology/Veterinary Science; and related programmes
j) Formal and Applied Sciences and Technology	Actuarial Sciences; Aviation; Computer Sciences; Information Technology; Mathematics; Multimedia Studies; Statistics; Textile and Fibre Science; and related programmes

Two global development agendas, namely the MDGs and Post-2015 SDGs, were considered in the study. Each development goal of the MDGs and Post-2015 SDGs was analysed in order to establish the categories of academic programmes that were most appropriate in addressing them. In addition, the percentage of the development goals that was addressed by the various categories of academic programmes was established.

The data was analysed using the Statistical Package of Social Sciences (SPSS). A code of 0 was given to categories of academic programmes that were not available and 1 to categories that were available in any given university. The data was analysed using frequency tables in order to determine the percentage of universities that were offering the various categories of academic programmes. A comparison of the percentages of universities offering any given category of academic programmes in relation to the percentages of development goals dependent on each category of academic programmes was established using bar graphs drawn from Microsoft Excel. Non-parametric tests were also carried out in order to establish if there was any significant association between the category of academic programmes and the type of university, public or private. In particular, the mean ranks of the Mann-Whitney U Test were calculated for each category of academic programmes in the groups of public and private universities and the significance of the two-tailed test was determined at a significance level of $p \leq 0.05$.

4. Findings on the proportion of global development goals dependent on categories of academic programmes

An analysis to determine the proportion of global development goals dependent on category of academic programmes was carried out. Tables 4 and 5 provide the categories of academic programmes that would largely contribute to each of the MDGs and Post 2015 SDGs, based on literature review.

Table 4. MDGs and closely related categories of academic programmes

MDGs	Closely related categories of academic programmes
a) Eradicate extreme poverty and hunger	i. Commerce related areas ii. Education iii. Formal and Applied Sciences and Technology iv. Medical and Health Sciences v. Natural and Life Sciences vi. Other Social Sciences vii. Political and Legal related studies viii. Sociology, Psychology and Development related studies
b) Achieve universal primary education	• Education • Other Social Sciences
c) Promote gender equality and empower women	i. Commerce related areas ii. Education iii. Humanities iv. Other Social Sciences v. Political and Legal related studies vi. Sociology, Psychology and Development related studies
d) Reduce child mortality	i. Education ii. Medical and Health Sciences iii. Natural and Life Sciences iv. Sociology, Psychology and Development related studies
e) Improve maternal health	i. Formal and Applied Sciences and Technology ii. Medical and Health Sciences iii. Other Social Sciences iv. Political and Legal related studies v. Sociology, Psychology and Development related studies

f)	Combat HIV/AIDS, malaria and other diseases	i.	Commerce related studies
		ii.	Education
		iii.	Medical and Health Sciences
		iv.	Natural and Life Sciences
		v.	Sociology, Psychology and Development related studies
g)	Ensure environmental sustainability	i.	Architecture and Engineering
		ii.	Commerce related studies
		iii.	Formal and Applied Sciences and Technology
		iv.	Natural and Life Sciences
		v.	Other Social Sciences
		vi.	Political and Legal related studies
		vii.	Sociology, Psychology and Development related studies
h)	Develop a global partnership for development	i.	Architecture and Engineering
		ii.	Commerce related studies
		iii.	Formal and Applied Sciences and Technology
		iv.	Other Social Sciences
		v.	Political and Legal related studies

Table 5. Post-2015 SDGs and closely related categories of academic programmes

Post-2015 SDGs		Closely related categories of academic programmes	
a)	End poverty in all its forms everywhere	i.	Commerce related studies
		ii.	Education
		iii.	Formal and Applied Sciences and Technology
		iv.	Natural and Life Sciences
		v.	Other Social Sciences
		vi.	Political and Legal related studies
		vii.	Sociology, Psychology and Development related studies
b)	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	i.	Commerce related studies
		ii.	Formal and Applied Sciences and Technology
		iii.	Medical and Health Sciences
		iv.	Natural and Life Sciences
		v.	Sociology, Psychology and Development related studies
c)	Ensure healthy lives and promote well-being for all at all ages	i.	Education
		ii.	Formal and Applied Sciences and Technology
		iii.	Medical and Health Sciences
		iv.	Sociology, Psychology and Development related studies
d)	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	i.	Commerce related studies
		ii.	Education
		iii.	Other Social Sciences
		iv.	Sociology, Psychology and Development related studies
e)	Achieve gender equality and empower all women and girls	i.	Commerce related studies
		ii.	Education
		iii.	Formal and Applied Sciences and Technology
		iv.	Political and Legal related studies
		v.	Sociology, Psychology and Development related studies

f)	Ensure availability and sustainable management of water and sanitation for all	i.	Architecture and Engineering
		ii.	Commerce related studies
		iii.	Formal and Applied Sciences and Technology
		iv.	Medical and Health Sciences
		v.	Natural and Life Sciences
		vi.	Other Social Sciences
		vii.	Political and Legal related studies
g)	Ensure access to affordable, reliable, sustainable and modern energy for all	i.	Architecture and Engineering
		ii.	Formal and Applied Sciences and Technology
		iii.	Natural and Life Sciences
		iv.	Political and Legal related studies
h)	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	i.	Architecture and Engineering
		ii.	Commerce related studies
		iii.	Education
		iv.	Formal and Applied Sciences and Technology
		v.	Medical and Health Sciences
		vi.	Natural and Life Sciences
		vii.	Political and Legal related studies
		viii.	Sociology, Psychology and Development related studies
i)	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	i.	Architecture and Engineering
		ii.	Education
		iii.	Formal and Applied Sciences and Technology
j)	Reduce inequality within and among countries	i.	Commerce related studies
		ii.	Education
		iii.	Formal and Applied Sciences and Technology
		iv.	Political and Legal related studies
k)	Make cities and human settlements inclusive, safe, resilient and sustainable	i.	Architecture and Engineering
		ii.	Formal and Applied Sciences and Technology
		iii.	Other Social Sciences
		iv.	Political and Legal related studies
		v.	Sociology, Psychology and Development related studies
l)	Ensure sustainable consumption and production patterns	i.	Commerce related studies
		ii.	Formal and Applied Sciences and Technology
		iii.	Natural and Life Sciences
		iv.	Political and Legal related studies
m)	Take urgent action to combat climate change and its impacts	i.	Architecture and Engineering
		ii.	Formal and Applied Sciences and Technology
		iii.	Natural and Life Sciences
n)	Conserve and sustainably use of oceans, seas and marine resources for sustainable development	i.	Architecture and Engineering
		ii.	Formal and Applied Sciences and Technology
		iii.	Natural and Life Sciences
		iv.	Political and Legal related studies

o)	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	i. ii. iii.	Commerce related studies Natural and Life Sciences Political and Legal related studies
p)	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	i. ii. iii.	Other Social Sciences Political and Legal related studies Sociology, Psychology and Development related studies
q)	Strengthen the means of implementation and revitalize the global partnership for sustainable development	i. ii. iii.	Commerce related studies Other Social Sciences Political and Legal related studies

Further analyses were carried out on the results on Tables 4 and 5 in order to establish the percentage of MDGs and Post-2015 SDGs whose realization was dependent on each of the ten categories of academic programmes, as provided on Table 6 and 7.

Table 6. Percentage of MDGs dependent on various categories of academic programmes

	Category of academic programme	Number of MDGs dependent on support from various categories of academic programmes	Percentage of MDGs dependent on support from various categories of academic programmes
a)	Humanities	1	12.5
b)	Education	5	62.5
c)	Commerce related studies	5	62.5
d)	Political and Legal related studies	5	62.5
e)	Sociology, Psychology and Development related studies	6	75.0
f)	Other Social Sciences	5	62.5
g)	Medical and Health Sciences	4	50.0
h)	Architecture and Engineering	2	25.0
i)	Natural and Life Sciences	4	50.0
j)	Formal and Applied Sciences and Technology	3	37.5

Table 6 revealed that Humanities, with only 12.5% of the MDGs relying on it, was the least desired category in the realization of the global development agenda. Other categories whose contribution towards realization of the MDGs was low were Architecture and Engineering (25% of MDGs dependence) and Formal and Applied Sciences and Technology (37.5% of MDGs dependence). On the other hand, Sociology, Psychology and Development related studies category (75% of MDGs dependence) was the most desired category for the realization of the global development agenda. Other highly desired categories of academic programmes were Education, Commerce related studies, Political and Legal related studies and other Social Sciences, all of which had more than half of the MDGs (62.5%) dependent on them for their realization.

Table 7. Percentage of Post-2015 SDGs dependent on various categories of academic programmes

Category of academic programme	Number of Post-2015 SDGs dependent on support from various categories of academic programmes	Percentage of Post-2015 SDGs dependent on support from various categories of academic programmes
1. Humanities	0	00.0
2. Education	7	41.2
3. Commerce related studies	10	58.8
4. Political and Legal related studies	12	70.6
5. Sociology, Psychology and Development related studies	8	47.1
6. Other Social Sciences	5	29.4
7. Medical and Health Sciences	4	23.5
8. Architecture and Engineering	7	41.2
9. Natural and Life Sciences	9	53.0
10. Formal and Applied Sciences and Technology	13	76.5

Table 7 revealed that the Humanities category was not a desired category in the realization of the Post-2015 SDGs. Other categories whose preference was less than half were Medical and Health Sciences (23.5% of SDGs dependence), Other Social Sciences (29.4% of SDGs dependence), Education (41.2% of SDGs dependence), Architecture and Engineering (41.2% of SDGs dependence) and Sociology, Psychology and Development related studies (47.1% of SDGs dependence. The Formal and Applied Sciences and Technology category (76.5% of SDGs dependence) was, on the other hand, portrayed as the most preferred cluster in the realization of the Post-2015 SDGs. The latter was followed by the categories of Political and Legal related studies (70.6% of SDGs dependence), Commerce related studies (58.8% of SDGs dependence) and Natural and Life Sciences (53% of SDGs dependence).

The differences in the dependence on the various categories of academic programmes by the MDGs and the Post-2015 SDGs could mainly be attributed to the increased number of goals, from eight in the MDGs to seventeen in the Post-2015 SDGs; the clearer articulation of the goals, targets and means of achievement of the Post-2015 SDGs as compared to the MDGs; and the re-direction of the global development goals to focus more on sustainability water sanitation, energy, green growth and environmental sustainability, inclusive economic development, governance and peace and security in the Post-2015 SDGs, beyond the improved people's livelihood agenda of the MDGs.

5. Distribution of academic programmes in universities and their proportionate contribution to the global development agendas

The study established the distribution of various programme categories in universities and the contribution of these categories to the realization of the MDGs and Post-2015 SDGs. The information is summarized in Graph 1 below.
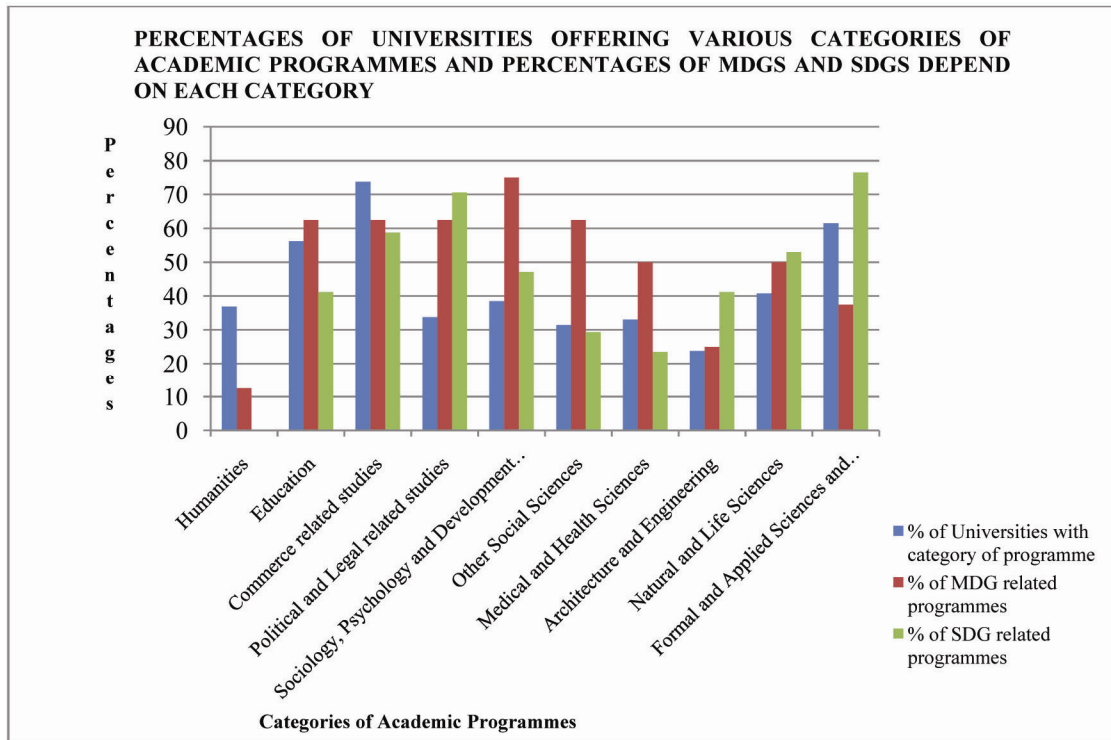
Graph 1. Percentages of universities offering various categories of academic programmes and the percentage of MDGs and SDGs that depend on each category

The results in Graph 1 revealed that the Humanities (36.9%) and Commerce related studies (73.8%) were over-subscribed to by the universities in the region in relation to the global expectations of their relevance to the realization of the MDGs and Post-2015 SDGs. On the other hand, Political and Legal related studies (33.8%), Sociology, Psychology and Development related studies (38.5%), Architecture and Engineering (23.8%) and Natural and Life Sciences (40.8%) were under-subscribed to in the universities in relation to the global expectations of their relevance to the realization of the MDGs and Post-2015 SDGs. Whereas the categories of Education (56.2%), Other Social Sciences (31.5%) and Medical and Health Sciences (33.1%) were portrayed as having been less subscribed to by the universities with respect to the global expectations of their relevance in the realization of the MDGs, they were portrayed as having been more subscribed to by the universities with respect to their anticipated contribution to the realization of the Post-2015 SDGs. On the other hand, the Formal and Applied Sciences and Technology (61.5%) category was portrayed as having been overly subscribed to by the universities in relation to its contribution toward meeting the MDGs but less subscribed to with respect to its anticipated contribution to the Post-2015 SDGs.

6. Associations between categories of academic programmes and type of universities

A comparison was made between the public and private universities offering each category of academic programmes, using mean ranks of the Mann-Whitney U Test. Levels of associations between the type of universities and the categories of academic programmes were further sought using the two-tailed test at a significant level of $p \leq 0.05$, as presented on Table 8.

Table 8. Levels of association between type of universities and categories of academic programmes

Category of academic programme	Mean Ranks of public universities with related academic programmes	Mean Ranks of private universities with related academic programmes	Approximate chi-square tests association significance level
Humanities	66.39	64.99	0.808
Education	69.11	63.46	0.339
Commerce related studies	71.44	62.14	0.076
Political and Legal related studies	68.39	63.86	0.421
Sociology, Psychology and Development related studies	66.78	64.78	0.730
Other Social Sciences	75.43	59.88	0.005*
Medical and Health Sciences	73.04	61.23	0.035*
Architecture and Engineering	80.43	57.05	0.000*
Natural and Life Sciences	84.64	54.66	0.000*
Formal and Applied Sciences and Technology	79.44	57.61	0.000*

* Significant level of $p \leq 0.05$

The results in Table 8 established that there was no significant association between the type of university and offering of academic programmes in the categories of Humanities, Education, Commerce-related studies, Political and Legal related studies and Sociology, Psychology and Development related studies at $p \leq 0.05$ significance level. However, at $p \leq 0.05$, significant associations were observed, in favour of public universities, in the offering of academic programmes in the categories of other Social Sciences, Medical and Health Sciences, Architecture and Engineering, Natural and Life Sciences, and Formal and Applied Sciences and Technology.

7. Conclusion and Recommendations

The study showed that there was over-subscription of academic programmes in the categories of Humanities and Commerce by the universities. This was contrary to the expectations of the global development agendas. This has potential to increase the rate of unemployment through the release of graduates, whose skills are not relevant, into an already saturated labour market. Universities need to give less focus to the development of more academic programmes in the categories of Humanities and Commerce. This can further be reinforced through formulation of national policies that demand for slowed development of academic programmes in these categories.

Conversely, there is need for more Political and Legal related studies, Sociology, Psychology and Development related studies, Architecture and Engineering and Natural and Life Sciences programmes for purposes of meeting both the current and future global development needs. It is still apparent that, although the tenure of the MDGs is coming to an end in 2015, many regions, including the East Africa region will still be focusing on this global development agenda, until such a time when the various countries will have fully adapted the Post-2015 agenda. In view of the foregoing, universities will need to prioritize the offering of academic programmes that have not met the expectations of the MDGs. These categories comprise of Education, Other Social Sciences including Cultural Studies and Media Studies, and Medical and Health Sciences. With the anticipated shift of the global development agenda to the Post-2015 SDGs, more universities will also need to focus on offering academic programmes in the Formal and Applied Sciences and Technology category. Universities, therefore, need to prioritize the development of academic programmes in the latter eight categories of academic programmes.

Individual countries and universities in East Africa need to prioritize the development of academic programmes that relate to the global, regional and national development agendas. This can be done through development of policies; advocacy; and funding for the support of the prioritized academic programmes. The latter direction has potential to

enhance realization of development agendas as a result of universities producing relevant products to the market, including appropriate human capital, research outputs, new knowledge and innovations.

With respect to the categories of academic programmes that need to be prioritized for purposes of realization of the global development agendas, no significant association was observed between the type of universities offering programmes in the categories of Education, Political and Legal related studies and Sociology, Psychology and Development related studies. However, significantly more public universities than private universities were observed to offer Other Social Sciences, Medical and Health Sciences, Architecture and Engineering, Natural and Life Sciences and Formal and Applied Sciences and Technology categories of programmes, a phenomenon also alluded to by Woldegiorgis & Doevenspeck (2013). The latter observation could be attributed to government funding, which is dominant in public universities than in private universities.

Funding is one of the critical factors that hinder the development and offering of academic programmes that support the global development agenda by universities in East Africa. Quality education demands for appropriate and adequate academic resources, including infrastructure, physical facilities, including laboratories, equipment and staff for the support of its academic programmes, all of which have great financial implications. Public finance is, however, not sufficient to meet the increasing demands of universities in East Africa. It is paramount that universities, and mostly, private universities, intentionally seek to increase their financial revenue base for purposes of supporting the development and implementation of the academic programmes that need to be prioritized for global development purposes.   Alternative sources of financing university education need to be sought including tuition, donations, research grants and development of innovative public-private partnerships (Association of Public and Land-grant Universities, Knowledge Center on Higher Education for African Development, 2014). Governments and universities in the region need to be more innovative in raising funds for the support of the much needed academic programmes. There is also need for universities to seek and partner with willing funding agencies in order to strengthen their academic resources for the support of preferred academic programmes.

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